

REMARKS/ARGUMENTS

Reconsideration and allowance of the present application based on the following remarks are respectfully requested.

Upon entry of the above amendments new claims 20-50 will be pending.

In this regard, and as apparently recognized in the Communication, Paper No. 8, mailed November 27, 2002, a Preliminary Amendment was submitted concurrently with the filing of the subject application. In particular, at item 14 of Form PAT-108 7/00, instructions were given for canceling claims 1-8 and amending claims 11 and 13-18. However, it appears that the separately submitted Preliminary Amendment filed concurrently with the present Application was not received and entered. A copy of this previously filed Preliminary Amendment is enclosed. As will be seen from this Preliminary Amendment, claims 9, 10 and 11 were also cancelled, claims 12-19 were amended and a new claim 20 was added. Therefore, at the time this application was taken up for examination, only claims 12-20 should have been pending.

In order to avoid any further confusion, a new set of claims 20-50 is presented herewith. However, in the event that the previously filed Preliminary Amendment is associated with the file and entered, please cancel all of the previously presented claims and please renumber the presently submitted list of claims as claims 21-51, respectively.

The presently submitted claims include both product claims and process claims. This is consistent with not only the claims presented in the Preliminary Amendments but also in the issued parent patent, US 6,183,834. Accordingly, although Applicants have previously elected, without traverse, claims 1-7, it is noted that claims 1-7 were previously cancelled from this application. In any case, in view of the treatment in the parent application it is respectfully submitted that examination of the product and process claims in this application is proper and is respectfully requested.

The newly presented claims are based on the originally presented claims and the disclosure, for example, page 2, lines 34-35 ("SEA value is ... at least 110 Jm²/kg"); page 7, lines 24-25 ("lower than 20 wt.%"); page 9, lines 1-3 (13 MPa and 15 MPa); page 12, lines 1-2 ("areal density ... between 0.5 and 2.5 kg/m²).

Accordingly, no new matter is added.

The presentation of new claims 20-50, overcomes the objections to claims 1-7. The “same invention” type double patenting rejection of claims 1-7 over claims 1-8 of the parent patent 6,183,834 is avoided since the pending claims are not of the same scope as any of the patented claims, *e.g.*, “at most 20 wt.%” in the current claim 20 and “at least 30 wt.%” in the patent claims.

Applicants also submit that the rejection of claims 1-7 as anticipated by or unpatentably obvious over U.S. 4,953,234, to Li *et al* (hereafter Li ‘234) is improper and should be withdrawn as applied to either claims 1-7 or to the new claims 20-50.

In this regard, Li ‘234 fails to anticipate the subject matter of independent claim 20 for at least the following reasons.

The disclosure of Li ‘234 does not describe a ballistic-resistant molded article in which the respective monolayers of unidirectionally oriented reinforcing fibers, such as high-drawn fibers of high molecular weight linear polyethylene, contain “at most 20 wt.% of a plastic matrix material” (the examples exemplify 63 wt% of fibers and 37 wt% of resin material).

There is no clear disclosure in Li ‘234 of monolayers having a fiber weight between 25 and 150 g/m².

The disclosure of Li ‘234 does not describe, explicitly or inherently, a ballistic-resistant molded article comprising a compressed stack of monolayers wherein the density of the compressed stack is at least 98.0% of the theoretical maximum density (this feature is also included in the original claim 1).

The absence of explicit disclosure is, apparently, recognized in the rejection. However, it is respectfully submitted that the disclosure does not inherently supply this feature. In this regard, as described by Applicants, (*see, e.g.*, Table 1 on page 14 of the specification) starting with exactly the same monolayers and number of monolayers in a stack, the resulting molded article will not necessarily have a density of at least 98% (0.980) of maximum theoretical density (*see, Samples A and B with densities of 0.969 and 0.974, respectively*).

Therefore, it is respectfully submitted that there is no basis for concluding that the features set forth in claim 20 are inherently present based on the disclosure of the Li ‘234 patent.

Since claims 21-26 are dependent on claim 20, none of these claims are anticipated by Li '234.

Still further, nothing in the disclosure of Li '234 would have suggested compressing the monolayers or prepgs under conditions resulting in the density values of at least 98.0% of the theoretical maximum density or that by so doing, the ballistic-resistance is so substantially improved.

In this regard, although Li '234 does not provide data corresponding to SEA values, the patentees do report the results of V_{50} measurements in Examples 1 and 2. The reported V_{50} values in these examples were 2093 ft/sec. and 2120 ft/sec., respectively. In contrast, the ballistic-resistant molded articles according to the present invention, as shown by the working examples, may achieve V_{50} values (which, as explained in the specification on page 3, lines 8-13, is used in the definition of the SEA values) in excess of about 740 m/sec (about 2428 ft/sec) (*see, e.g.*, Example III in Table 2, page 15) or about 913 m/sec (about 2995 m/sec) (Example V in Table 2). Therefore, to the extent that these values may be compared, the ballistic-resistant shaped articles according to embodiments of the present invention may achieve an increase in the V_{50} value of at least about 14.5%. Similarly high V_{50} values were obtained in other examples reported in the specification.

This is strong evidence that the ballistic-resistant molded articles according to the present invention are neither anticipated by nor obvious in view of Li '234.

For substantially the same reasons, the ballistic-resistant molded articles according to independent claim 27 or, claims 28-30, dependent thereon, are not explicitly or inherently anticipated by Li '234. In addition, there is no disclosure in Li '234 that a ballistic-resistant molded article having an areal density of between 10 and 40 kg/m² could be fabricated to achieve the specific energy absorption (SEA) values as specified in these claims.

Accordingly, none of claims 27-30 are anticipated by or obvious in view of Li '234.

New claims 46-50 are directed to a semi-manufactured article useful for the manufacture of a ballistic-resistant article. These articles are not anticipated by the disclosure of Li '234 at least for the reason that this reference does not disclose such semi-manufactured article having at most 20 wt% of plastic matrix and having an areal density of from 0.5 to 5 kg/m². Accordingly, nothing in the disclosure of Li '234 explicitly or inherently anticipates or suggests the subject matter of claims 46-50.

As stated at the outset, the Examiner is also requested to reconsider the propriety of the previously made restriction requirement in light of the issuance of product and process claims in the issued parent and in further view of the failure to take into consideration the two preliminary amendments filed in this application.

Assuming that the restriction requirement is withdrawn and claims 31-45 are examined, it is respectfully submitted that the process set forth in these claims is neither explicitly nor inherently anticipated by Li' 234 and that one of ordinary skill in the art would not have been motivated to modify the process disclosed by Li '234 in any way to make the claimed process obvious at the time the present invention was made.

At a minimum, there is no disclosure or suggestion of compressing a stack of cross-laid monolayers having a fiber weight between 25 or 50 and 150 g/m², at an elevated temperature and at a pressure of at least 13 MPa, or at least 15 MPa, as set forth in claims 31-35.

There is no disclosure of a process as set forth in claims 36-45, wherein semi-manufactured packages of cross-layered monolayers having an areal density of from 0.25 to 5 kg/m², with at most 20 wt% of plastic matrix material, and which have been compressed at an elevated temperature and a first pressure of at least 13 MPa are formed into a stack and compressed at an elevated temperature and second pressure and cooled while under pressure. Moreover, there is also no disclosure wherein the stack of semi-manufactured packages or stack of pre-pregs is compressed at a pressure which is lower than the pressure used to form the semi-manufactured packages or pre-pregs.

Accordingly, claims 29-45 are also in condition for allowance.

Therefore, all objections and rejections having been addressed, it is respectfully submitted that the present application is in a condition for allowance and a Notice to that effect is earnestly solicited.

An Information Disclosure Statement submitting references which were cited in connection with oppositions to the counterpart European Application is being submitted herewith. Also included in the list of documents on the Form PTO-1449 are previously submitted references (submitted on September 21, 2000, i.e., concurrently with the Preliminary Amendment which apparently was never received or considered). Copies of

these references are of record in the parent file, and not already of record herein. It is not believed that these references defeat patentability of the present claims.

Should any issues remain unresolved, the Examiner is encouraged to contact the undersigned attorney for Applicants at the telephone number indicated below in order to expeditiously resolve any remaining issues.

Respectfully submitted,

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